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Notice of Allowability

Application No.

09/935,002

Examiner

H.Jey Tsai

Applicant(s)

RHEE, TAE-POK

Art Unit

2812

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to paper filed on 6/29/05.
2. ☒ The allowed claim(s) is/are 1-15,25-27,29-40,50 and 51.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☒ Certified copies of the priority documents have been received in Application No. 08/974,371.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____ | 7. <input type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

Reasons For Allowance

The following is an Examiner's statement of reasons for the indication of allowable subject matter:

The basis for the allowability is :

Prior art of record does not teach combination of forming a groove in the insulating layer on a semiconductor substrate, forming a conductive layer conductive layer over the insulating layer and groove, patterning the conductive layer to form lower conductive lines slantly longitudinally across the groove, forming a cylindrical insulator from an oxidizable material over the lower conductive lines and protruding from the upper surface of the groove and forming upper conductive lines over the insulator to form a rounded upper conductive lines.

The claimed invention overcome the most pertinent prior arts for the following reasons:

1. Prior art: JP '406 teaches forming a groove in the silicon substrate, lower conductive lines and magnetic core or air in the groove but does not teach forming a groove in the insulating layer on a semiconductor substrate, forming lower conductive lines slantly longitudinally across the groove, forming a cylindrical insulator from an oxidizable material over the lower conductive lines and protruding from the upper surface of the groove and forming upper conductive lines over the insulator to form a rounded upper conductive lines.

2. Prior art: Yamada et al. 6,236,538 teaches forming a groove in the silicon or glass substrate, lower conductive lines in the groove and a magnetic core material in the groove does not teach forming a groove in the insulating layer on a semiconductor substrate, forming a conductive layer conductive layer over the insulating layer and groove, patterning the conductive layer to form lower conductive lines slantly longitudinally across the groove, forming a cylindrical insulator from an oxidizable material over the lower conductive lines and protruding from the upper surface of the groove and forming upper conductive lines over the insulator to form a rounded upper conductive lines.

3. Prior art: Sundaram et al. 5,372,967 teaches forming a groove in a silicon substrate or in an insulating layer, lower conductive lines in the groove and planarizing the cylindrical insulator so that the upper surface is planarized (not protruding) but does not teach forming a groove in the insulating layer on a semiconductor substrate, forming a conductive layer conductive layer over the insulating layer and groove, patterning the conductive layer to form lower conductive lines slantly longitudinally across the groove, forming a cylindrical insulator from an oxidizable material over the lower conductive lines and protruding from the upper surface of the groove and forming upper conductive lines over the insulator to form a rounded upper conductive lines.

Art Unit: 2812

4. Prior art: Lue 5,863,806 teaches forming conductive diffusing lines in the substrate and oxidizing the substrate to form an insulator but does not teach forming a groove in the insulating layer on a semiconductor substrate, forming a conductive layer over the insulating layer and groove, patterning the conductive layer to form lower conductive lines slantly longitudinally across the groove, forming a cylindrical insulator from an oxidizable material over the lower conductive lines and protruding from the upper surface of the groove and forming upper conductive lines over the insulator to form a rounded upper conductive lines.

Any comments considered necessary by applicant must be submitted no later than the payment of the Issue Fee and, to avoid processing delays, should preferably **accompany** the Issue Fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance".

Any inquiry of a general nature or clerical matters or relating to the status of this application or proceeding should be directed to the customer service whose telephone number is (703) 308-4357.

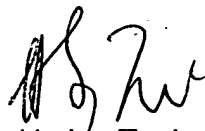
Any inquiry concerning this communication or earlier communications from the examiner should be directed to H. Jey Tsai whose telephone number is (571) 272-1684. The examiner can normally be reached on from 7:00 Am to 4:00 Pm., Monday thru Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael S. Lebentritt can be reached on (571) 272-1873.

The fax phone number for this Group is 571-273-8300.

hjt

9/9/2005



H. Jey Tsai

Primary Examiner
Patent Examining Group 2800